MEMO

To: Michael Torres, Remedial Project Manager, United States Environmental Protection Agency

From: Jon Hamilton, Senior Project Manager, SBA Shipyard PRP Group

CC: Scott Lindenmuth, Technical Coordinator, SBA Shipyard PRP Group
Beth Hesse, Project Coordinator, SBA Shipyard PRP Group
Tommy Doran, Louisiana Department of Environmental Quality
Amy Salinas, United States Environmental Protection Agency
Blake Atkins, United States Environmental Protection Agency

Date: July 15, 2022

Re: Bi-Monthly Progress Report #23; May through June 2022
Remedial Investigation/Feasibility Study
SBA Shipyard Superfund Site, Jennings, Jefferson Davis Parish, Louisiana
EPA ID: LAD008434185

EHS Support LLC ("EHS Support"), on behalf of the SBA Shipyard Potentially Responsible Party (PRP) Group ("PRP Group"), is providing this Bi-Monthly Progress Report associated with the Remedial Investigation (RI) and Feasibility Study (FS) activities being conducted at the SBA Shipyard Superfund Site located in Jennings, Jefferson Davis Parish, Louisiana ("Site" or "SBA Site"). This progress report is being provided in accordance with the Administrative Settlement Agreement and Order on Consent for the RI/FS Study ("Settlement Agreement") between the United States Environmental Protection Agency (USEPA) and PRP Group Respondents dated October 25, 2016, and amended March 7, 2018.

Actions Taken to Comply with Settlement Agreement

Project Work Performed in May through June 2022

Actions taken in May and June 2022 to comply with the Settlement Agreement consisted of implementing the activities described in (and associated with) the following:

- Fish Tissue Sampling Work Plan, was dated and submitted to USEPA and Louisiana Department of Environmental Quality (LDEQ) on April 23, 2021 (EHS Support, 2021a). The 2021 Fish Tissue Sampling Work Plan was approved by the USEPA on May 17, 2021. Technical comments provided by USEPA and LDEQ in separate correspondence dated November 2, 2020, January 20, 2021, and March 17, 2021, were considered and incorporated into the 2021 Fish Tissue Sampling Work Plan.
- Technical comments from USEPA/LDEQ regarding the need to analyze frozen fish tissue for organotins. These comments were made despite sediment results from the Dry Dock (i.e.,

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Investigation Area of Concern [IAC]-7) that show there is no risk of exposure to fish in this area of the SBA Site (EHS Support, 2021b).

Field Work

No field activities were performed during the period.

Analytical Data Validation and Evaluation

On June 20, 2022, EHS Support, on behalf of the PRP Group, submitted (by email) the fish tissue organotins analytical data results and the associated data validation report to USEPA. Further discussion related to organotins is discussed later in this memo.

Document Submittal

Bi-Monthly Progress Report #22, which described activities completed in March and April 2022, was submitted to USEPA and LDEQ on March 15, 2022 (EHS Support, 2022).

Project Management, Communication, and Reports

There were no public meetings between the PRP Group, EHS Support, and USEPA/LDEQ during this period.

The below communications with the USEPA, LDEQ and PRP Group and EHS Support are summarized regarding the constituent of potential concern organotins.

March 6, 2022: Teleconference with USEPA, LDEQ, PRP Group, and EHS Support

USEPA, LDEQ, the PRP Group, and EHS Support held a teleconference on May 6, 2022. The purpose of the teleconference was to discuss the response to USEPA/LDEQ's technical comments, dated March 10, 2022, and April 18, 2022, regarding the Organotins Sediment Sampling Results (OSSR) Technical Report, which was dated and provided to USEPA and LDEQ on October 15, 2021 (EHS Support, 2021b). The PRP Group submitted a separate response to comments (RTC) document for the March 10 and April 18 comments with the teleconference invitation to the USEPA and LDEQ on May 6, 2022. EHS Support presented a slide deck and discussed the responses with USEPA and LDEQ during the teleconference.

The key technical points discussed, based on the USEPA/LDEQ March 10, 2022 RTCs, included the following:

- Comparisons between the equilibrium partitioning sediment benchmarks (ESBs) and field concentrations are appropriate (i.e., dry weight basis).
    - It is equally acceptable to compare field concentrations to ESBs on an organic carbon (OC)-normalized or dry weight (dw) basis, provided the basis is consistent between field concentrations and ESBs.
    - The change requested by USEPA/LDEQ does not alter the findings in the 2021 OSSR report.

- The basis for the appropriateness of the organic carbon partitioning coefficient (K_{oc}) value of 32,000 liters/kilogram (L/kg) for tributyltin (TBT) was discussed.
    - The derivation by Dr. James Meador (National Oceanic and Atmospheric Administration [NOAA] Ecotoxologist) is:
        - Based on empirical data from two freshwater and four marine studies.
        - Protective of freshwater exposure due to greater partitioning of organotins in freshwater compared to marine studies.
        - Based on Dr. Meador's 2000 analysis that determined the geometric mean K_{oc} value was 38,300 L/kg.
    - LDEQ requested K_{oc} value of 8,100 L/kg for TBT is not appropriate.
        - It is a theoretical, estimated value from USEPA EPISuite.
        - And used a TBT species not typically found in the environment.
- An OC-normalized bioaccumulation factor (BAF_{oc}) for TBT of 0.5 (kg OC/kg tissue dw [dewatered]) is more appropriate and conservative.
    - Derivation was by Dr. Meador to conservatively estimate uptake to a sensitive benthic species.
    - Applied conservatively to estimate fish tissue concentrations, assuming fish tissue concentrations would not exceed concentration in benthic invertebrates.
- BSAF (kg OC/kg lipid dw) values presented in the approved 2021 Fish Tissue Sampling Work Plan were re-evaluated. It was determined that the BAF_{OC} model was more appropriate and conservative to estimate organotin tissue concentrations based on the following:
    - BSAFs (kg OC/kg lipid dw) are normalized to sediment organic carbon and tissue lipid content based on a relationship developed for nonionic compounds; BSAF were not derived from the Risk Assessment Information System as indicated in the comment.
    - A toxicokinetic review of TBT bioaccumulation by Dr. Meador indicated that the BAF_{OC} was more appropriate for estimating benthic invertebrate tissue.
    - Lipid normalization with the BSAF (kg OC/kg lipid dw) results in lower estimates of organotin bioaccumulation.
- EHS Support also provided, at USEPA/LDEQ's request, the standard operating procedure (SOP) for organotin analysis in fish tissue from ALS Laboratory in Houston, Texas. This SOP included the holding time for organotin analysis in frozen fish tissue, which is 1 year from the date the fish were collected.

After the RTCs regarding the USEPA/LDEQ March 10, 2022 technical comments were discussed, LDEQ stated they would still require fish tissue analysis for organotins for the RI/FS and fish advisory.

Therefore, to move the project forward, EHS Support presented to USEPA/LDEQ the Fish Tissue Contingency Plan (FTCP) for organotin analysis of fish tissue at the SBA Shipyard. The FTCP followed the iterative approach of the RI/FS Work Plan (EHS Support, 2018) and 2021 Fish Tissue Sampling Work Plan by analyzing fish tissue for organotins beginning in the Dry Dock (IAC-7) and background area of the Mermentau River. The FTCP approach included two phases:

- **Phase 1:** Catfish and bass tissue from the Dry Dock and background are analyzed and compared to the tissue screening level (TSL).
    - If the maximum concentration reported from the laboratory is less than the TSL, no further assessment is required.
    - If the maximum concentration is greater than the TSL, proceed with Phase 2.

    - The Dry Dock compared to background concentrations will provide a perspective of regional tissue enrichment.
- **Phase 2:** Catfish, bass, and crawfish tissue from other Site areas (e.g., two Northern Property Slips, Barge Slip, and Barge Cleaning Area Drainageway) are analyzed and compared to the TSL.
    - If the maximum concentration reported from the laboratory is less than the TSL, no further assessment is required.
    - If the maximum concentration is greater than the TSL, an additional comprehensive assessment is required.
    - The other Site areas compared to background concentrations will provide a perspective of the regional tissue enrichment.

The FTCP was submitted to USEPA and LDEQ on May 6, 2022, immediately after the teleconference ended.

The RTCs to USEPA/LDEQ's technical comments, dated April 18, 2022, were tabled due to the necessity to move forward with the FTCP.

Based on the discussion with USEPA and LDEQ on May 6, 2022 and for completeness purposes, EHS Support is making minor technical clarifications to the RTCs for the March 10, 2022, and April 18, 2022, USEPA/LDEQ technical comments and will submit the RTCs to USEPA and LDEQ in the coming months. In addition, the 2021 OSSR report will also be updated and submitted to USEPA and LDEQ. These minor revisions have not changed the technical results and findings of the 2021 OSSR report.

May 16, 2022: Request for Approval of the FTCP

On May 6, 2022, EHS Support submitted a formal request for approval of the FTCP to USEPA and LDEQ. The request stated:

> *We truly appreciate everyone's responsive attention and the time and focused effort to resolve this matter.*
>
> *As requested by EPA and LDEQ and consistent with Section 2.3.4 (Laboratory Analytical Scope) of the Fish Tissue Sampling Work Plan, fish and crawfish tissue samples from all on-site features and background areas sampled have been analyzed for polycyclic aromatic hydrocarbons (PAHs), total mercury, methylmercury, percent lipids, and percent moisture. The analytical results for these analyses have been received and the fish tissue report is pending inclusion of the organotins analysis outlined in the Fish Tissue Contingency Plan. Concentrations of dioxins and furans in on-site sediments have been evaluated and are consistent with regional background sediment conditions; therefore, consistent with the criteria outlined in Section 2.3.4 of the Fish Tissue Sampling Work Plan, dioxins and furans have been removed from further consideration for fish tissue analysis.*
>
> *The biota-sediment accumulation approach does not indicate a potential for organotin concentrations in fish tissue to exceed the Tissue Screening Levels. However, to address agency concerns, the proposed Fish Tissue Contingency Plan submitted to EPA and LDEQ on Friday, May 6, 2022 will provide empirical data as an additional line-of-evidence regarding potential*

concentrations of organotins in fish and crawfish tissue at the SBA Shipyard Site. The Fish Tissue Contingency Plan follows procedures in the EPA and LDEQ approved RI/FS Work Plan sampling program that was designed using an iterative investigation approach and that included characterization of Site and background conditions. Based on the current information, we believe this proposed plan is protective of human health and the environment and provides the requisite tissue analysis for organotins to support determination of whether a fish consumption advisory may be warranted in the pending fish tissue report.

We will keep both EPA and LDEQ apprised of all activities associated with the project, including expected analytical reporting dates for the organotins analysis of fish tissue.

USEPA provided approval on May 15, 2022, with the following response:

This is to let you know that we have evaluated your proposal. We concur with and approve your proposed contingency plan as a good outcome. Let us know if you need more information, please.

June 9 and June 20, 2022: Organotins Fish Tissue Results and Data Validation Report

On June 9, 2022, EHS Support submitted to USEPA the results of the fish tissue analysis in accordance with FTCP. In summary, the results indicated the following:

- No organotin compounds were detected in the background samples.
- One organotin compound, n-butyltin cation, was detected in the predator fish sample and the bottom feeder sample at concentrations of 0.34 parts per billion (ppb) J and 0.26 ppb J, respectively, where the J qualifier (which indicates an estimated value by the laboratory) indicates…. Both concentrations are nearly three orders of magnitude less than the TSL of 230 ppb.

On June 20, 2022, EHS Support provided the data validation report for the organotins analytical results from the Dry Dock and background tissue samples. EHS Support requested that USEPA provide approval to dispose the remaining frozen tissue specimens at the laboratory (ALS laboratory in Houston, Texas).

June 23, 2022: Approval by USEPA Regarding Organotins and Frozen Fish Disposal

On June 23, 2022, USEPA submitted the following approval to EHS Support regarding the SBA Site:

Thank you for this update, the data validation report on the TBT and fish tissue issue, and your appeal to warrant consideration to the below-referenced SBA Shipyard PRP Group (Group) requests on the current remedial investigation (RI) work. We have evaluated and sensibly reviewed all of this.

This is confirm that the Group is authorized to inform the laboratories that they may arrange proper disposal of remaining whole frozen fish, fish tissue, and fish tissue extract currently being held at the laboratories. Furthermore, this is to confirm that no additional fish or crawfish tissue analysis for organometallic compounds is mandatory to meet the objectives of the RI/FS workplan.

I will update the state project manager of all this. I am also very excited about being at this pass of the cleanup project. This represents progress where we can now begin to think about planning, scheduling, and production of a draft RI/FS report. But first things first; we look forward to receiving your Fish Tissue Report in around early September.

Results of Sampling and Tests

All data collected to date has been received and validated by the contract laboratory.

Work Planned for the Next Two Months

The work anticipated for July and August 2022 will consist of the following:

- Submit the Fish Tissue Report, including analytical results of tissue samples from the SBA Site and background in the Mermentau River of all constituents of potential concern (e.g., polycyclic aromatic hydrocarbons and organotins) in accordance with the 2021 Fish Tissue Sampling Work Plan.
- Review and evaluate the SBA Site data (e.g., soil, groundwater, surface water, sediment) for the behavioral human health risk assessment and ecological risk assessment for the RI/FS at the SBA Site.

Problems Encountered/Anticipated Delays

There have been no problems or anticipated delays in meeting deadlines for any required tasks identified during this period.

Please call Jon Hamilton (225-610-3304), Scott Lindenmuth (312-882-3705), or Beth Hesse (828-551-9067) if you have any questions regarding this progress report.

References

EHS Support. 2018. Remedial Investigation/Feasibility Study. Work Plan. May 17. 2018

EHS Support. 2021a. Fish Tissue Sampling Work Plan. April 23.

EHS Support. 2021b. Organotins Sediment Sampling Results (OSSR) Technical Report. October 15.

EHS Support. 2022. Bi-Monthly Progress Report #22. March 15.

EHS Support. 2022b. Fish Tissue Contingency Plan. May 6.